[CHAPTER 12]

Reducing the Risks of Managing Pests

Understanding and evaluating pest management practices are essential to making appropriate regulatory decisions on pesticides. The Department also has a legal mandate to encourage the use of more environmentally sound pest management systems, including integrated pest management (IPM, *see Glossary)*. Many of DPR's programs emphasize a reduced-risk approach to pest management. DPR programs facilitate risk reduction through information, encouragement, incentives, and community-based problem-solving.

The Pest Management Analysis and Planning program (PMAP) within the Pest Management and Licensing Branch assumes the lead role in implementing the Department's Pest Management Strategy, manages the Department's IPM Innovator Program, administers pest management grants and the Alliance program, performs pest management analyses, and maintains a pest management database.

The control of the pests of agricultural crops is a problem of greatest importance in California, not because the state is more pest-ridden than the others, but because California is a land of high-priced products of the soil.
– 1919 Department annual report

Pest Management Strategy

In 1995, after more than a year of effort and consultations with staff and diverse stakeholders, DPR completed its Pest Management Strategy. The Pest Management Strategy provides strategic direction for the Department to increase its use of pest management information in decision-making and determine how it can encourage the voluntary adoption of reduced-risk practices by pest managers. The Pest Management Strategy allows the Department to identify its appropriate role, as well as areas where a regulatory agency should not be involved such as education and research.

The Pest Management Strategy has four goals:

- Incorporate reduced-risk pest management philosophy throughout the California pesticide regulatory program. This involves:
  - Ensuring employees and County Agricultural Commissioners understand the pest management strategy and what it means to their activities.
  - Identifying DPR functions and work processes to show where and how pest management considerations will be emphasized in the pesticide regulatory program.
  - Evaluating how increased emphasis on reduced-risk pest management will affect the pesticide regulatory program.
- Advocate and assist with the adoption of economically viable reduced-risk pest management practices. This involves:
  - Developing appropriate criteria and identifying higher risk use patterns.
  - Identifying and eliminating impediments to the adoption of reduced-risk pest management practices.
  - Creating incentives to support the voluntary adoption of reduced-risk pest management practices.
  - Using regulatory authority — as appropriate — to facilitate the adoption of targeted practices.
- Provide leadership in working cooperatively with other interested parties to promote research, education, and demonstration of reduced-risk pest management practices. This involves:
  - Consulting with a broad cross section of interested groups and individuals for advice on appropriate priorities and activities.

– Coordinating the goals and activities of key organizations and establishing partnerships aimed at facilitating the adoption of reduced-risk pest management practices.

- Evaluate the effectiveness of DPR's efforts to expedite the adoption of reduced-risk pest management practices.

Pest Management Advisory Committee

DPR, in cooperation with the California Department of Food and Agriculture (CDFA), established the Pest Management Advisory Committee (PMAC) in June 1992 to advise the DPR Director on issues pertaining to reduced-risk pest management. Legislation in 1994 (Chapter 545, SB 1752) formally recognized the PMAC in law and gave it the task of evaluating applications for grants under DPR's Pest Management Grants program (*see below*), and making funding recommendations to the DPR Director.

In 2000, the Department restructured the PMAC to broaden its membership and give it a wide-ranging advisory function. The PMAC's functions include:

- To advise DPR on regulatory development and reform initiatives, evolving public policy and program implementation issues, and science issues associated with evaluating the use of pesticides.
- To identify and evaluate proposed modifications to current policies and procedures employed by DPR to reduce the potential risks posed by pesticides, and to facilitate the exchange of ideas and information among the interested parties.
- To assist DPR in identifying, facilitating, and promoting reduced-risk pest management practices and pest management systems. Activities include, but are not limited to, reviewing proposals for pest management research and recommending to the DPR Director which proposals should be funded. Funds in the DPR Fund may be expended, upon appropriation, for pest management research purposes to carry out the recommendations of the PMAC.
- To promote the IPM Innovator Program to existing and potential participants and, along with the County Agricultural Commissioners, CDFA, University of California including Cooperative Extension, California State University system, the Natural Resources Conservation Service, local resource conservation districts, and others, to help locate groups employing innovative pest management systems.
- To provide leadership in working cooperatively with other interested parties to promote research, education, and demonstration of reduced-risk pest management practices in accordance with the Pest Management Strategy.

The DPR Director chairs the committee, and the CDFA Secretary (or his or her representative) is vice chair. Under regulation (3CCR 6256), the PMAC includes representatives of the University of California, California State University system, U.S. EPA Region 9, and the County Agricultural Commissioners. There are also 24 at-large members, appointed by the DPR Director based on their relevant expertise and diversity of perspectives on pesticide issues, and representing various categories of external stakeholders: six representatives from agricultural production; five from academia and public foundations; four representing registrants and trade associations; four from environmental and public interest groups; one from a farm labor organization; two from nonagricultural pesticide user groups; one representing the general public and consumer advocacy; and one representing pest control advisers. (The Pesticide Registration and Evaluation Committee is DPR's other major advisory body. With an interagency membership, it fulfills the consultation mandates of the pesticide regulatory program's functional equivalency under CEQA. *(See Index for other functions of the PREC.)*

In general, a pesticide salesman should not advocate treatment when the pest is not known to be present.
– 1938 Department annual report

IPM Innovators Program

In the fall of 1994, DPR presented its first "IPM Innovator" awards to acknowledge agricultural and urban organizations demonstrating leadership and creativity in new methods of pest management. DPR hosts an annual event where Innovators are recognized. DPR developed the program to recognize pioneering pest control managers for

their leadership in voluntarily implementing reduced-risk pest management systems and for their work in sharing those solutions with others.

The IPM Innovator typically has a history showing the concept is economically viable, uses a pest management system to reduce the risks posed by the use of traditional pest control practices, and documents that system so that others can learn and apply the system to their own situation. An IPM Innovator also demonstrates a willingness to share information with others.

Another characteristic of an effective IPM Innovator system is the reliance on sound scientific principles of pest management, including a preference for using beneficial organisms and cultural practices for pest control when feasible. Pest problems are addressed as part of the overall situation, rather than pest by pest or at only one time of the year. An IPM Innovator system also has a research and development component to find new ways for managing pests. This may include a range of activities from contracted research with academic institutions to on-site trials of participant-identified techniques.

The organizational structure of the IPM Innovator may be very formal, such as a commodity advisory board, a resource conservation district, or a school district, or it may be less formal, such as a community organization that promotes reduced-risk pest management. Many successful IPM Innovators also have representatives from federal, state, or local government, academia, and the business community as advisors to, or members of their organization.

In addition, many IPM Innovators have a well-developed organization — and an educational component responsible for coordinating and working with participants to encourage the sharing of ideas and information. Many innovators provide training and educational programs for participants. Their outreach programs identify potential new participants and encourage them to join the system.

DPR's IPM Innovator awards, established in 1994, honor those who demonstrate leadership and creativity in developing and sharing reduced-risk methods of pest management.

Grant Programs

DPR's grants program was established in 1996 with the Pest Management Grants and was expanded in 1998 with the Pest Management Alliance grants. DPR's approach is a problem-solving continuum that begins with the funding of small, localized projects that help groups take research results and move them into the field via applied research and demonstration projects that, if successful, can be funded for broad geographic implementation. Together, they form a step-wise progression from applied research and demonstration projects, funded by the Pest Management Grants, to Alliance grants for regional or statewide implementation of multi-disciplinary reduced-risk practices.

Criteria used to award grants: Commodity groups, trade associations, and others are encouraged to submit reduced-risk pest management proposals in key areas of regulatory concern. Priority areas have included reduced-risk alternatives to pesticides targeted by regulatory action; prevention of pesticide contamination of ground and surface water; reduction of human exposure due to drift; reduction of field worker exposure; alternatives to highly toxic pesticides, including organophosphates, methyl bromide and other fumigants; and development of IPM for urban environments, particularly schools and public buildings.

The Pest Management Grants (PMG) program helps non-profit organizations, private groups, university researchers, government entities, and others address pest management challenges on a local or regional scale. They are funded by the Food Safety Account and other funds *(see Alliance section below and Chapter 15, Funding)*. With this program, DPR can encourage voluntary projects to develop reduced-risk pest management practices through the cooperative efforts of local and regional groups. Emphasis is on projects that (1) clearly demonstrate reduced-risk qualities, and (2) develop alternatives to critical pest management systems that face disruption due to regulatory action, the development of pesticide resistance, or infestations of new pests. As required by law, proposals are first reviewed by the PMAC, which then makes funding recommendations to the Director. Grants typically range from $10,000 to $50,000, and successful projects may receive funding for up to three years.

These grants are awarded to provide support for groups to work with university researchers, private industry, and consultants to perfect reduced-risk practices through applied research grants and to demonstrate the practices locally or regionally through demonstration grants.

The Pest Management Alliance program supports projects designed to implement interdisciplinary reduced-risk pest management across a broad geographic region. The Alliance is intended to help a variety of public and private groups: marketing orders and commodity groups, trade associations, schools, and cities address urgent pest management issues resulting from pesticide use. Stakeholders within each group form a collaborative, interdisciplinary team that uses a systems approach toward pollution-preventing pest management. During an Alliance project, DPR staff and members of the Alliance team establish a dialogue. Alliance projects also link pest control advisers (PCAs) and university outreach efforts. The assumption is that team members have already solved pest problems through applied research or practical experience (perhaps through a Pest Management Grant), but have not adequately shared the research results.

Applying for an Alliance grant is typically a two-year cycle that begins with a pest management evaluation. In the first year, interested groups apply for DPR assistance to evaluate their existing pest management systems. The evaluation describes key pests and current pest management practices the group uses statewide, outlining conventional pest management, innovative approaches to risk reduction, and any regional variations. Applicants can apply for a one-time grant of up to $10,000 to develop this evaluation and establish a potential Alliance team.

Recipients then work with DPR staff to complete their evaluations, which are a prerequisite for Pest Management Alliance proposals in the second year. With the evaluation as a foundation to pursue full Alliance grant funding, the team develops a work plan that outlines a sequence of steps to resolve pest management problems faced by the group. Ideally, the work plan should focus on existing reduced-risk practices already used by the most innovative growers or other stakeholders. Based on the scope of the work plan, the group requests up to $100,000 per year to demonstrate and implement adoption of innovative pest management practices. The work plan proposals are next reviewed by the PMAC. Groups may reapply annually for funding for up to three years. They must also provide matching funds or in-kind services equal to the monetary amount of each year's grant. The groups must update their evaluation annually and must revise the work plan if they wish to reapply for funding.

The Alliance program began in 1997 with a one-time $1 million appropriation to fund reduced-risk pest management. Following the first grant cycle in 1998, another one-time appropriation was made for grants awarded in 1999. In 1999, a legislative augmentation for the Alliance program provided $1 million of annual support for both Pest Management Grants and the Alliance program. (A portion of the continuing appropriation is used to augment Food Safety Account funding of the Pest Management Grants to provide the tools needed as a step toward future successful Alliances.)

The development of remedies to control insects and diseases has become, during recent years, a highly specialized industry. It has been found also that more enters into the case than just the destruction of the pest. Remedies which are effective against a specified insect in many cases have been detrimental to the host plants.
– 1931 Department annual report

Other Risk Reduction Activities

The best way to mitigate a pesticide or pest management problem often combines regulatory action and voluntary adoption of improved pest management techniques. DPR relies on the Pest Management Analysis and Planning program (PMAP, part of the Pest Management and Licensing Branch) to provide the in-depth evaluations required for policy making. PMAP works closely with agriculture and the public to identify pest management strategies that reduce pesticide hazards to health and the environment.

Pest Management Analyses: The decision to impose use restrictions or to prohibit uses of pesticides cannot be made in a vacuum. Regulators must calculate and compare pesticide-related risks before and after a prospective regulatory action. If this is to be done meaningfully, consideration must be given to how pesticide users are likely to respond when a pesticide is restricted or canceled. Pesticide regulators must be cognizant of the fact that pest management takes place within an ecosystem. It is important to understand the net effect of removing a pesticide from the system. Substituting one chemical for another may only shift the problem from one area of concern to another. For example, as fewer chemical alternatives are available, resistance to the remaining

pesticides is more likely to develop among targeted pests. Or there may be situations when loss of a particular pesticide may result in the use of others that are more toxic to beneficial organisms and thus more disruptive of natural forces at work in the system to regulate pests. In both cases, the net effect is likely to be more pesticide use.

When regulatory action may severely restrict or eliminate use of a pesticide, PMAP analyzes the alternatives. To ensure that the impacts of regulatory action are understood, DPR needs to know how the particular pesticide is used, what pests it controls, and what alternatives exist to control those pests. PMAP provides information on other existing registered pesticide products, as well as nonchemical controls such as cultural practices or biological control strategies.

PMAP is the lead group in compiling these analyses. Other DPR branches and programs develop information on physical and chemical properties of pesticides (Registration Branch and Environmental Monitoring Branch); medical considerations (Medical Toxicology and Worker Health and Safety Branches); amounts of pesticides historically used (Enforcement and Pest Management and Licensing Branches); environmental fate, and environmental considerations (Environmental Monitoring Branch).

CDFA's Agricultural Statistics Branch and the County Agricultural Commissioners are also consulted for information on production and value of affected commodities. Commissioners, growers, UC researchers, and Cooperative Extension staff are consulted on pest management options and their relative efficacy. This information is evaluated by PMAP and relayed to DPR management for regulatory decisions. This information is also used by grower organizations, UC Cooperative Extension staff, and academic scientists to determine the need for new pest management strategies.

Before making its recommendations, PMAP may also conduct a thorough review of IPM practices that may be affected. Other considerations include risk to workers, environmental degradation, and grower objectives for producing a marketable commodity.

Advisory services: DPR staff provide their expertise in advising local agencies on how to effectively implement reduced-risk pest management strategies. For example, during the 1990s, DPR staff worked with the cities of Santa Monica and San Francisco on development and implementation of their IPM programs. In Santa Monica, DPR staff helped develop an innovative contract bidding process to identify pest control companies with superior IPM services. In San Francisco, the Department serves as an advisor to city agencies implementing San Francisco's ordinance mandating adoption of IPM for public agencies. Additionally, DPR has participated in workshops to set up urban IPM programs for local agencies in San Luis Obispo, Marin and Santa Barbara counties.

Schools have been a special focus for DPR and its staff. In 1993, DPR staff began working with school districts across the state to implement reduced-risk pesticide programs. In 1994, DPR sent to each of the state's 1,000-plus school districts a 43-page booklet designed to encourage and assist school officials in examining and improving their pest management practices, and to help them set up an IPM program. In 1996, DPR reported on its two-year survey of the State's school districts about their pest management practices, policies and programs. It found that public school districts throughout the State are developing and adopting innovative ways to control weeds, insects, rodents and other pests. However, DPR also found that progress is sometimes stymied by technical, institutional or economic constraints.

In response, DPR scientists moderated several urban IPM workshops, which led to helping three school districts with their IPM programs: Fontana, Pajaro Valley, and Los Angeles Unified.

DPR also recognized several school districts with "IPM Innovator" awards for their pioneering work in finding reduced-risk solutions to school pest problems.

In 1998, DPR awarded a $77,000 Alliance grant to a consortium of school districts to develop pesticide solutions and resources for school district administrators. The project provided guidance for reduced-risk IPM programs in schools by developing a training curriculum for administrators, staff, and school workers; developing a record-keeping system on pesticide use; and distributing pest management education videos to each county in the State.

Numerous requests for licenses were made during 1931 for the sale of "Cure Alls," which are claimed will eliminate all insect pests and diseases and provide enough plant food for years.
– 1931 Department annual report

In 2000, DPR expanded its program to assist schools around the state in adopting IPM policies and practices to meet the challenge of managing pests while maintaining the highest environmental and health standards.

In the 2000 Alliance grant cycle, DPR awarded $100,000 for a new project to develop model school IPM programs in Marin, Ventura, Los Angeles, San Diego, and San Luis Obispo counties. The project will allow IPM experts to conduct site assessments that can be used for specialized training of facility managers. Additionally, regional and local alliances will be developed to foster IPM in schools. Concurrently, critical information about pesticides and pest control will be provided to all levels of school staff. Finally, information developed by the previous schools alliance will be used to provide decision-makers at schools with alternatives to conventional practices.

In addition, DPR is working with other boards and departments of Cal/EPA and the California Department of Education to tie IPM into related areas such as school gardens and environmental education.

School IPM Program: In the 2000-01 fiscal budget cycle, DPR received $634,000 to establish a statewide voluntary program for school IPM. DPR is committed to facilitating voluntary establishment of IPM policies and programs in schools throughout California by:

- Establishing contacts with school districts and constituents. School districts that want to reduce use of toxic pesticides will be able to contact DPR for assistance.
- Identifying IPM coordinators for school districts. DPR will conduct training programs to ensure that all coordinators (typically managers of maintenance operations) understand principles of IPM. DPR will also host regional IPM workshops for IPM coordinators and others associated with schools.
- Surveying schools to determine pest management practices before and after DPR's program. This will help DPR know if the program is working.
- Developing an IPM guidebook. DPR will tailor existing guidebooks (many have already been done elsewhere) to conditions in California. Pests covered will include insects, vertebrates, diseases of landscape plants and turf, weeds, and microorganisms found in kitchens and bathrooms. The guidebook will consider pests found in all the diverse regions of California—the coast, valleys, deserts, and mountains.
- Establishing an IPM in Schools Web site. DPR will borrow the best ideas from other school IPM Web sites and adapt its site to specific conditions in California. DPR will emphasize user friendliness and will constantly update links to other helpful sites.
- Participating in statewide conferences. DPR staff will publicize its school IPM program at meetings attended by school administrators, educators, parents, and maintenance and grounds staff.